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An arithmetic workshop at the University of Cincinnati was held to improve the primary and intermediate arithmetic programs for the academically gifted children of the Cincinnati public schools. The material presented for use in the primary grades contains concepts to be developed, appropriate activities to reinforce the learning, and puzzles and games of interest to these children.

Areas explored include: sets (grouping), place value, number order, different names for the same number, addition, subtraction, multiplication, division, problem solving, telling time, fractions, approaches to geometry and puzzles and games.

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Arithmetic Enrichment Ideas for Grades 1 2 3

Issued by E. E. Holt
Superintendent of Public Instruction

State of Ohio
Department of Education
Columbus, Ohio

1962

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ARITHMETIC ENRICHMENT IDEAS

For Grades 1, 2 and 3

Prepared by

Cincinnati Public Schools
Department of Instruction

in Cooperation with
Programs for the Academically Gifted

Under the Direction of
R. A. Horn
Director, Division of Special Education
State Department of Education
Columbus, Ohio

September 1962

FOREWORD

This booklet contains ideas and exercises developed by teacher participants in an Arithmetic Workshop at the University of Cincinnati. The workshop was held to improve the primary and intermediate arithmetic programs for the academically gifted children in the Cincinnati Public Schools.

The accelerated mathematics program in Cincinnati is one of the research projects made possible by state funds through the Program for the Academically Gifted. The State Department of Education is pleased to work cooperatively with the school districts for the further improvement of instruction.

The material presented in this booklet will provide challenging enrichment experiences for many primary children. It is my hope that this material will be of value to administrators and teachers in other school systems throughout Ohio.

E. E. Holt
Superintendent of Public Instruction

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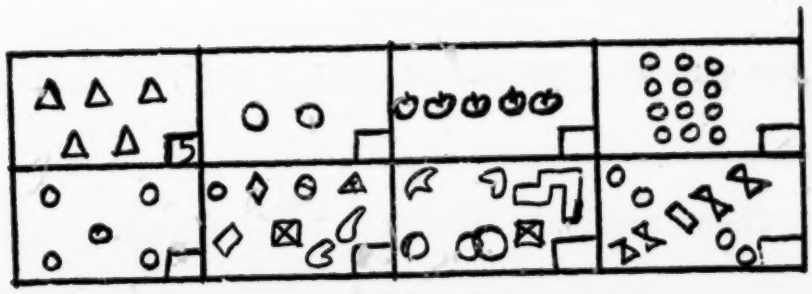
NUMERATION SYSTEM

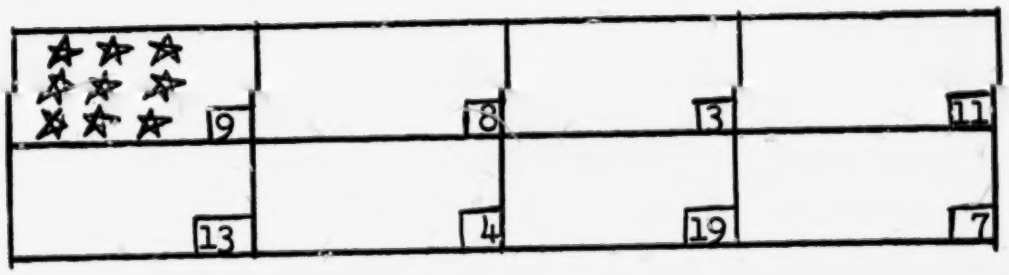
Sets (Grouping)

Activity A

Fold your paper to match the boxes. Write the numeral that matches the set (group) in each box.



Fold another paper to match these boxes. Draw the set (group) that matches the numeral in each box.



Activity B

Draw the correct number of objects in each section. Be sure you put them into two sets.

Activity C (Identifying number groups)

List familiar objects and write the numeral represented by the object.

Example:

1. Wheels on a car [4]
2. [ ]
3. [ ]
4. etc. [ ]

Activity D

Draw pictures of sets of 5 using different objects, such as squares, circles, triangles, and rectangles.

Activity E (Counting)

Under each box write the numeral to show the number of dots in the box.

____ ____ ____ ____ ____

How many boxes have 6 dots? ____

Draw five boxes and put different numbers of dots in each box.

Activity F

Draw! How many? These numerals tell how many things to draw.

3_____ 7_____

4_____ 10_____

5_____ 8_____

Place Value

Activity A

In each square on the left you see a ten. Draw the number of ones needed to match the numeral you see at the top. Then write the numeral that tells how many ones.

13

tens	ones
1	

1 ten ____ ones

15

tens	ones
1	

1 ten ____ ones

Number Order

Activity A

Do you know these?

Write the numeral to show the number that comes after 9. ____
Write the numeral to show the number that comes before 21. ____

Now try these!

What is the 4th number that comes after 20? ____
What is the 2nd number that comes after 7? ____
Write the number that comes between 17 and 19. ____
Write the numbers that come between 14 and 17. ____

Different Names for the Same Number

Activity A (Grades 2-3)

Regroup each of the given numerals to show groupings of hundreds, tens, and ones.

Example:

112 = 100 + 10 + 2
323 = ___ + ___ + ___
230 = ___ + ___ + ___
211 = ___ + ___ + ___

Find the sum of the given addends and the sum of the regrouped addends. Prove that the results are the same.

Activity B (Grade 3)

Express 6 as the sum of three different addends.

Examples:

3 + 2 + 1 = 6 3 + 3 + 0 = 6

Express 7 as the sum of three different addends.

Express 8 as the sum of three different addends.

Express 9 as the sum of three different addends.

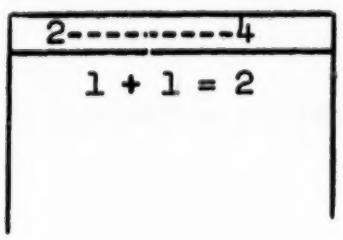
FUNDAMENTAIS OPERATIONS AND THEIR USE

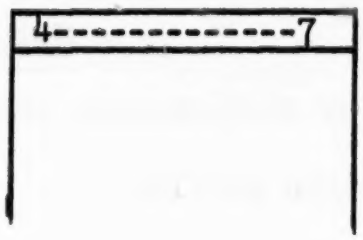
Addition

Activity A

Write all the number problems whose sums are between 2 and 4, inclusive; between 4 ard 7, inclusive.

Example:





Activity B (Grade 3)

Make an addition chart. Add the number 0 to each of the numbers in the top row. Example: 0 + 0 = 0; 0 + 1 = 1. Write the sums in the spaces provided. Add 1 to each of the numbers in the top row. Add 2 . . . . . 9 to each of the numbers in the top row and write the sums in the spaces provided.

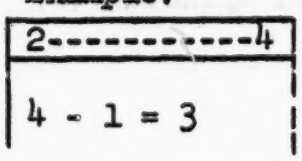
+	0	1	2	3	4	5	6	7	8	9
0	0	1								
1										
2										
3										
4										
5										
6										
7										
8										
9										

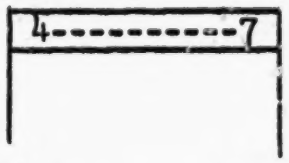
Subtraction

Activity A

Write all the number problems whose differences are between 2 and 4, inclusive; between 4 and 7, inclusive.

Example:





Multiplication

Activity A (Use of distributive property of multiplication - Grade 3)

Think about this problem.

$N = 6 \times 38$

Rewrite 38 as a certain number of tens and ones, then:

$N = 6 \times (30 + 8)$
$N = (6 \times 30) + (6 \times 8)$
$N = 180 + 48$
$N = 228$

Work the following problems by the method described above. Show your work to to your teacher.

1. 9 x 25 =
2. 6 x 102 =
3. 8 x 49 =
4. 7 x 56 =
5. 9 x 83 =

Activity B (Grade 3)

Make a multiplication chart. Begin with the one in the left column. Multiply each of the numbers in the top row by 1. Example: 1 x 1 = 1; 1 x 2 = 2. Write the results in the spaces provided. Then multiply each of the numbers in the top row by 2, and so on.

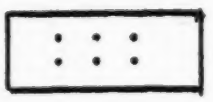
x	1	2	3	4	5	6	7	8	9
1	1	2	3						
2	2	4							
3	3	6							
4									
5									
6									
7									
8									
9									

For Example:
4
8
12
16
20
24
28
32
36

List the patterns you find in the chart. (See above)

Activity C (Grade 3)

Show the meaning of 2 x 3 with a rectangular array.
Example:
3 indicates how many in each row.
2 indicates how many rows.



Show the meaning of:
1. 3 x 4
2. 7 x 5
3. 3 x 6
4. 5 x 9
5. 4 x 3

Activity D (Grade 3)

Fill in each column with number facts from the multiplication table.

0-9	10-19	20-29	30-39	40-49	50-59	etc.

Activity E (Grade 3)

Fill in each column with number facts from the multiplication table, both factors having odd numbers.

0-9	10-19	20-29	30-39	40-49

Activity F (Grade 3)

Can you multiply on your fingers to find products of facts greater than 5 x 5? Here's how to do it.

Example: Multiply 7 x 6 on the fingers.

Determine how much greater than 5 each factor is and extend that many fingers.

Add the number of extended fingers for tens.

2 + 1 = 3 tens

Multiplify bent-down fingers for ones.

3 x 4 = 12 ones

So, 7 x 6 = 30 + 12 = 42

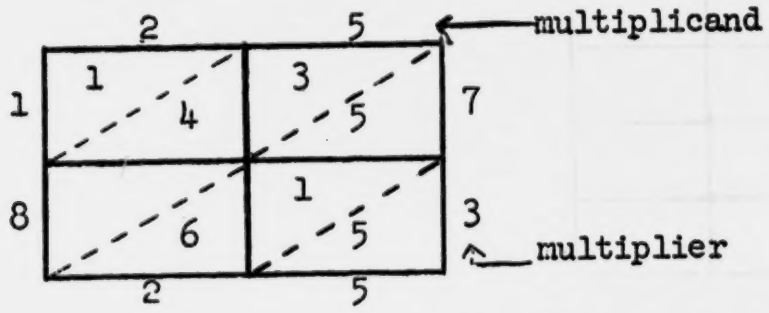
Now you try to multiply on your fingers. Draw the extended and bent fingers for each problem.

6 x 8 =
7 x 7 =
8 x 7 =
9 x 9 =
6 x 9 =

Activity G (Grating or lattice method of multiplication - Grade 3)

Draw a square. Divide the square into four smaller squares. Draw diagonal lines through each small square as shown in the illustration. Write the multiplicand at the top of the square and the multiplier at the right of the square for the problem.

Example: 73 x 25



Begin with 7 x 5 = 35. Write the 3 above the diagonal and the 5 below it. Then, 7 x 2 = 14. Write the 1 above the diagonal and the 4 below it. Then, 3 x 5 = 15. Write the 1 above the diagonal and the 5 below it. Then 3 x 2 = 6. Write the 6 below the diagonal.

The numbers in the squares are added diagonally. Start adding with the lower right-hand diagonal and carry to the next diagonal when necessary. The products appear at the ends of all diagonals used. Check the result by multiplying the regular way.

Work these problems by the Grating Method and check:

23 x 75
13 x 18
53 x 87
19 x 23

Division

Activity A (Division Readiness)

Make an accordion book about 3's. Use it to work these problems. Write your answers to tell "how many."

	Answer
1. How many 3's = 6?	☐
2. How many 3's = 15?	☐
3. How many 3's = 21?	☐
4. How many 3's = 30?	☐
5. How many 3's = 18? etc.	☐

More Than One Operation

Activity A (Review of fundamental operations)

Follow the sign! Write your answers in the spaces provided.

	x3	+5	-2
3			
2			
5			
8			

Activity B (Review of fundamental operations)

Take a partner and take a number! For example, choose a child to give all the possible combinations whose answer is 28. Have him write these combinations in a column. Check his work. Then have him give you a number and you write all the possible combinations for it.

28	36	45	18	45	16	12
7 x 4 19 + 9 35 - 7						

Activity C

Magic Square

10	3	8
5	7	9
6	11	4

Do you know what a Magic Square is? This is one. What can you discover about it? Find the sum of each row, column, and main diagonal. Then you will know!

Square A

Experiment with the given Magic Square. Draw lines for a new square and call it Square A. Add 7 to each number of the given Magic Square and write the answers in the correct spaces.

Is Square A a Magic Square? Prove it.

Square B

Experiment again. Draw lines for a new square and call it Square B. Subtract 2 from each number in the given Magic Square and write the answers in the correct spaces.

Is Square B a Magic Square? Prove it.

Square C

Experiment again. Draw lines for a new square and call it Square C. Multiply each number in the given Magic Square by 5 and write the answers in the correct spaces.

Is Square C a Magic Square? Prove it.

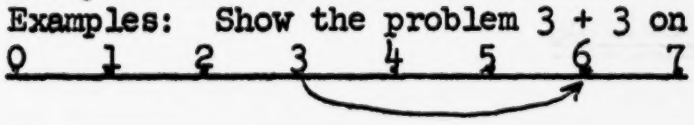
Activity D

Use a number line or the hundreds board to get the answer for the following:

1. A number halfway between 0 and 100. What is the number? ____
2. A number 2 tens more than 36. What is it? ____
3. A number halfway between 50 and 100. What is it? ____
4. A number halfway between 40 and 50. What is it? ____
5. A number 9 more than 81. What is it? ____
6. A number 10 less than 38. What is it? ____
7. A number twice as much as 7. What is it? ____
8. A number that is half of 50. What is it? ____
9. A number 15 more than 45. What is it? ____
10. A number 13 less than 77. What is it? ____

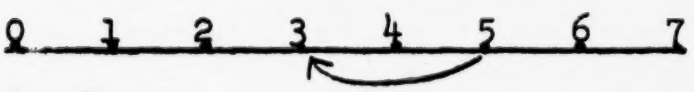
Activity E

Can you use a number line to show addition and subtraction?
Examples: Show the problem 3 + 3 on a number line.



3 + 3 = n
3 + 3 = 6

Show the problem 5 - 2 on a number line.



5 - 2 = n
5 - 2 = 3

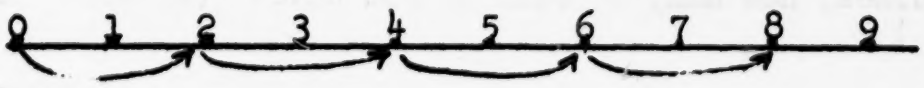
Work these on a number line.

1. 5 + 3 = n
2. 7 - 4 = n
3. 9 - 5 = n
4. 4 + 5 = n
5. 8 - 3 = n

Activity F

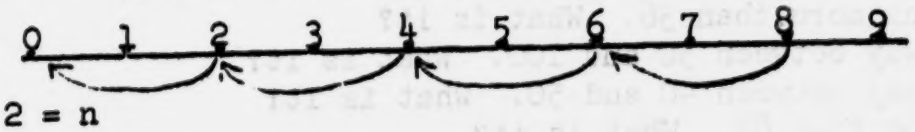
Can you use the number line to show multiplication and division?
Examples:

Show the problem 4 x 2 on a number line. (On the number line multiplication is represented as movement from left to right in equal steps of a given size. 4 x 2 means to take 4 steps, each 2 units in length.)



4 x 2 = n
4 x 2 = 8

Show the problem 8 ÷ 2 on a number line. (On the number line division is represented as movement from right to left in equal steps of a given size. 8 ÷ 2 means to take 4 steps, each 2 units in length.)



8 ÷ 2 = n
8 ÷ 2 = 4

Work these problems on a number line:

1. 3 x 2 = n
2. 4 x 3 = n
3. 12 ÷ 4 = n
4. 10 ÷ 2 = n
5. 3 x 4 = n

Problem Solving

Activity A (Estimating)

Estimate! Think and give sensible answers. Draw a circle around the correct answer.

1. Does 23 + 58 = 70, 69, 81?
2. Does 49 + 33 = 72, 82, 63?
3. Does 89 - 43 = 56, 43, 46?
4. Does 79 + 21 = 90, 101, 100?
5. Does 59 + 49 + 39 = 180, 150, 147?
6. Does 8 + 9 + 7 = 21, 30, 24, 25?
7. Does 20 + 3 + 8 = 25, 17, 31?
8. Does 3 x 10 + 5 - 5 = 20, 30, 35?
9. Does (8 - 4) - 2 = 2, 0, 4?
10. Does 89 - 19 = 80, 70, 69?

Activity B (Story problems)

Read and think. Work these problems.

1. Mother has $48 in paper money in her purse. She has the same number of $1, $5, and $10 bills. How many bills of each kind does she have? (Answer: 3 bills of each kind.)

2. How many times a day does a clock strike if it strikes only for the hours? (Answer: 78 times for 12 hours; 156 times for 24 hours.)

3. If you have $1.20 all in nickels and dimes and have twice as many nickels as dimes, how many of each do you have? (Answer: 12 nickels and 6 dimes.)

4. Jack bought a gun and holster. Together they cost $1.70. The gun cost $1.00 more than the holster. How much did each cost? (Answer: gun, $1.35; holster, $.35.)

Activity C (Story problems)

Do you like to go shopping? Are you a good shopper? Read! Think! Do!

Fill in the blanks.

The ball and top together cost _____.
The train costs _____ more than the kite.
The top costs _____ less than the ball.

Make up your own number sentences about the toys.

Activity D (Number sentences)

Can you make number sentences for problems and show the operations to perform to get the answer?
Example:

Bill had groups of 3's. When he put them together, he had 12. How many groups did he have?

n x 3 = 12, 12 ÷ 3 = 4, 4 x 3 = 12, Answer: 4 groups.

Now make number sentences for these problems and show the operations to perform to get the answer.

1. Ann had 5 in each group. When she put her groups together she had 15. How many groups did she have?

2. Jack had 3 groups of the same size. He put them together and had 18. How many were in each group?

Next write a story problem for these number sentences. Draw a picture to show the meaning of each number sentence.

1. 2 x 5 = n
2. 4 x 2 = n

Complete the following number sentences:

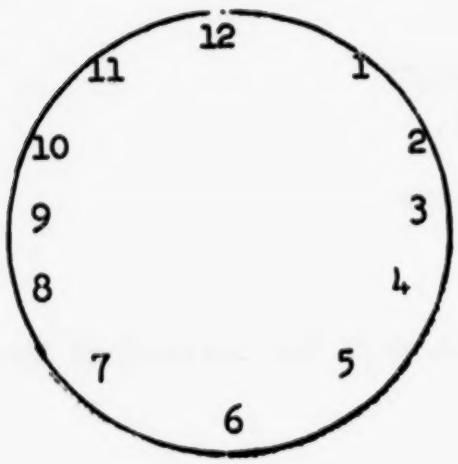
1. 2 □ 5 = 10
2. 9 □ 2 = 11
3. 7 x □ = 56
4. □ x 9 = 36
5. 15 □ 8 = 7
6. (3 □ 9) ÷ 6 = 2
7. (3 x 5) □ 27 = 42
8. (27 □ 3) □ 6 = 15
9. (8 □ 7) ÷ □ = 5
10. 6 x □ = 18

OTHER CONCEPTS

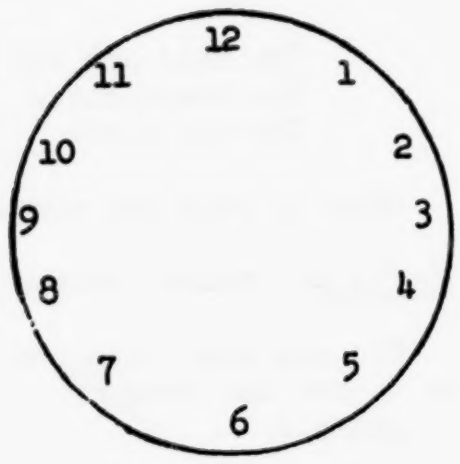
Telling Time

Activity A

Are you "clock wise?" Find out. Put hands on these clocks.

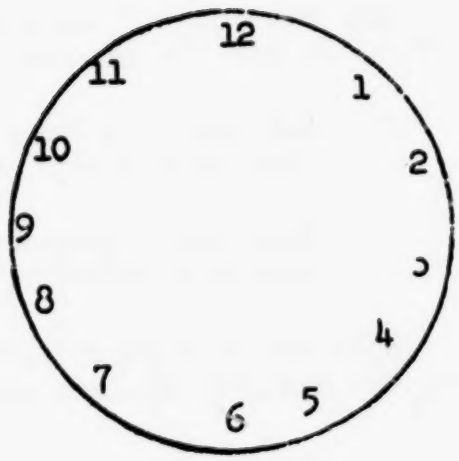


Getting Up Time

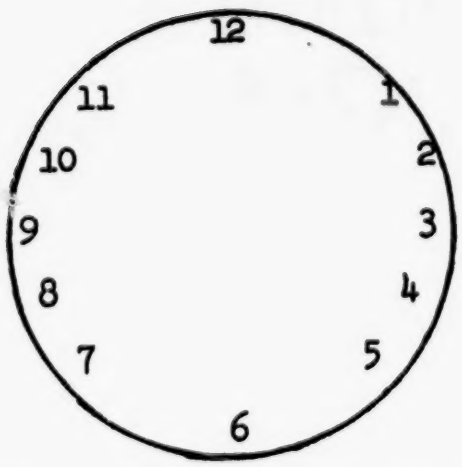


Breakfast Time

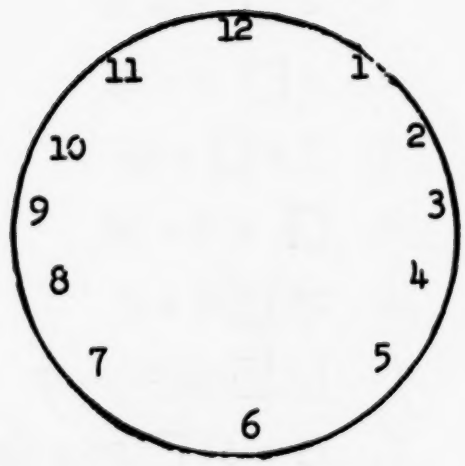
Time School Starts



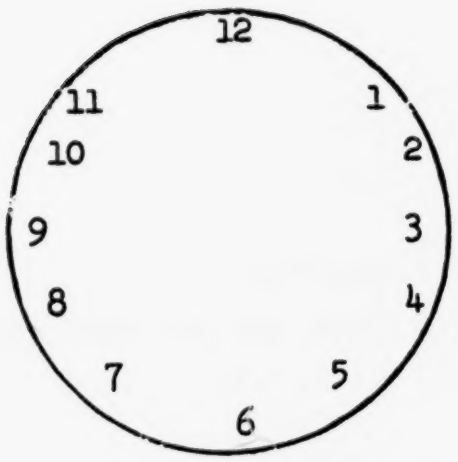
Lunch Time



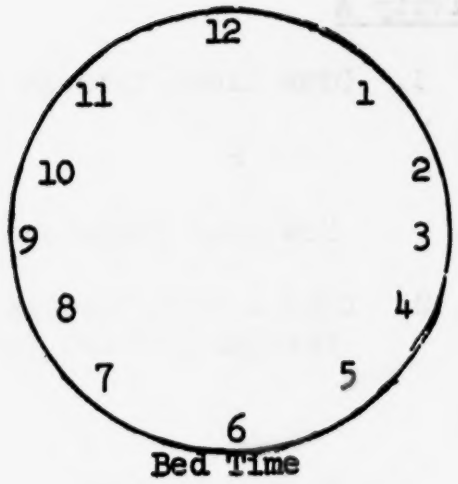
Time to go Home from School



Dinner Time



TV Program Time



Bed Time

Answer these questions:

What time will it be 3 hours after breakfast? _____
What time will it be 3 hours after lunch? _____

Make up "clock wise" questions of your own.

Fractions

Activity A (Developing concepts)

Match symbols with correct pictures by drawing a line from the picture to the symbol.

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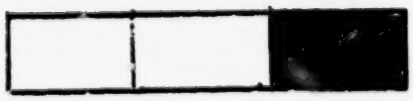

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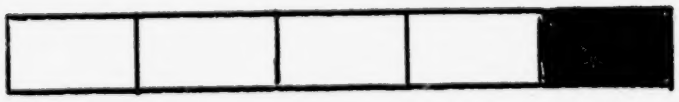
1/2



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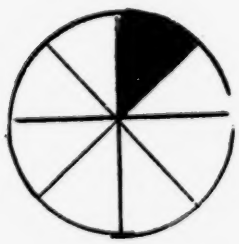


1/3

Approaches to Geometry

Activity A

1. Draw lines through point P.

P.

How many lines can you draw through point P? _____

2. Draw a line through points A and B. How many lines can you draw going through the two points? _____

A. B.

Extend line AB at each end. This is a line. The part of the line AB is called a line segment.

Activity B

Given points A, B, and C not on the same straight line

1. Connect a line through A and B.

C.

A. B.

2. Connect a line through A and C.
3. Connect a line through C and B.
4. How many sides does this figure have? ____
5. What name do we give to this figure? _____.

Activity C

How many line segments can you make? Show your answer by a drawing.

1. How many line segments can you draw which connect:
   (a) two points, A and B?

A. B.

   (b) three points, A, B, and C, not all in a straight line?

A.

B.

C.

   (c) four points, A, B, C, and D, no three of which are in the same straight line?

A.

B.

C.

D.

(d) five points, A, B, C, D, and E, no three of which are in the same straight line?

A.

.B

C.

.D

.E

Activity D

Given the points A, B, C, and D

A. .B

C. .D

1. Connect points A and B.
2. Connect points A and C.
3. Connect points B and D.
4. Connect points C and D.
5. How many lines does this figure have? _____
6. What name do we give to this figure? _____

This figure is a closed figure because the lines meet at the points given.

Activity E

Given five points A, B, C, D, E

A. .C

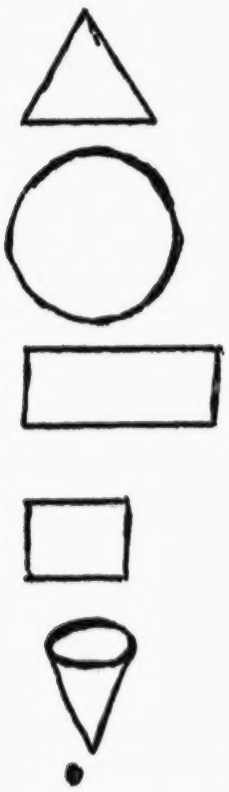
.D

B. .E

1. Connect points A and C.
2. Connect points C and D.
3. Connect points D and E.
4. Connect points E and B.
5. Connect points B and A.
6. How many lines have you drawn? _____
7. What name do we give to a figure with 5 sides? _____
8. How many points do we need to draw a quadrilateral? _____

Activity F (Grade 3; simpler test could be made for Grade 2)

Can you identify shapes with words? Draw a line from a shape to its name.



Circle

Point

Square

Cylinder

Triangle

Cube

Cone

Rectangle

Line

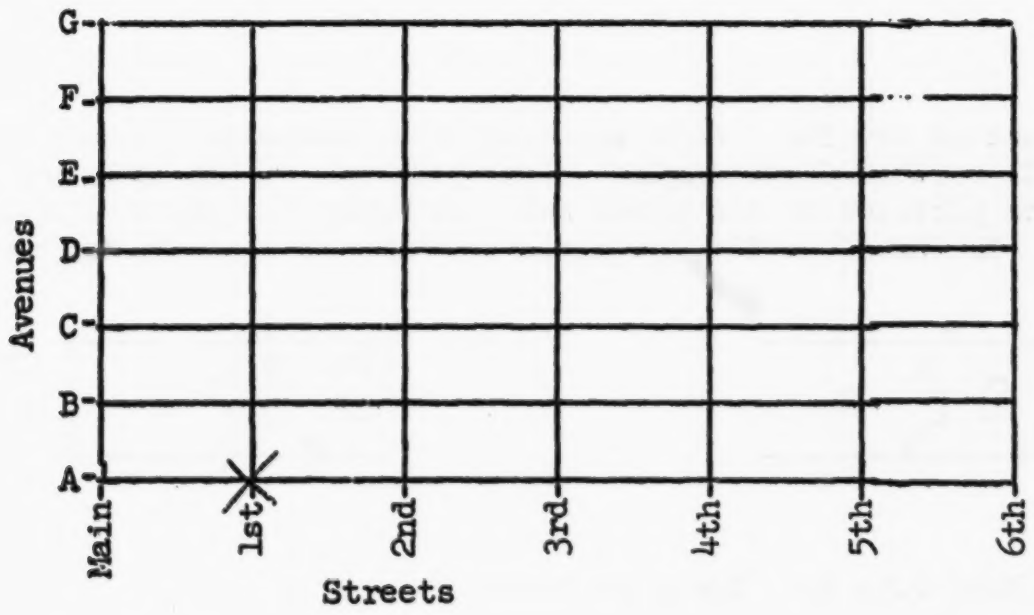
Activity G

Draw a cat using triangles. How many triangles did you use?_____

Activity H

Could you show where you lived on a map of city streets?

Example:
If you lived on the corner of 1st and A street, it is indicated with an X.



Indicate the following:

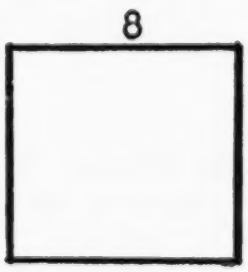
1. E and 3rd streets with a check
2. A and 5th streets with a plus sign
3. C and 5th streets with a minus sign
4. F and 2nd streets with a dot
5. D and 4th streets with a circle.

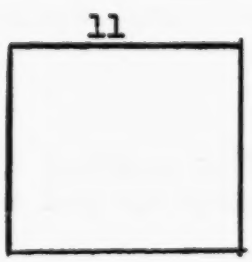
PUZZLES AND GAMES

Puzzles

Activity A

Draw a square on the chalkboard or your paper. Write a numeral on the top of the square. Fill in the square with combinations of that number. Make another square. Change the numeral on the top. Fill in the square with combinations of the new number.





Activity B

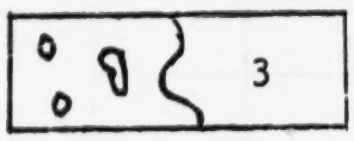
Draw pictures of things we buy by the pair, by the dozen, by the quart.

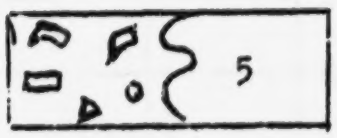
Activity C

Use shapes as the bases for pictures. Your pictures can be drawn, or you can use colorful paper shapes. Make four pictures using circles, triangles, and squares.

Activity D

Number puzzles are fun. Make some for your classmates to use. Here is how. Cut small cardboard rectangles. Draw pictures on one end, and write numerals about the pictures on the other end. Separate the parts with a jigsaw scissors cut. Children can fit the parts together to work the puzzles.

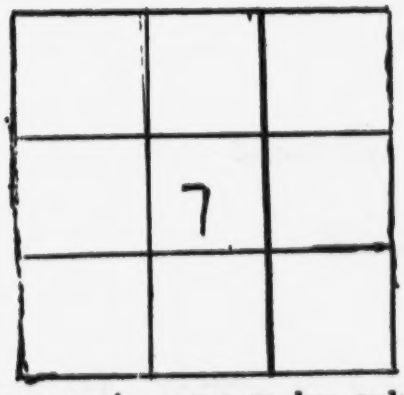




Activity E

Try your luck with the "Lucky 21 Puzzle."

1. Put the numeral 7 in the center of a diagram for a magic square. Fill in the numerals from 1 to 12 in the other spaces without repeating any numeral so that the sum of the numbers in any direction, across, down, and diagonally, is always 21.

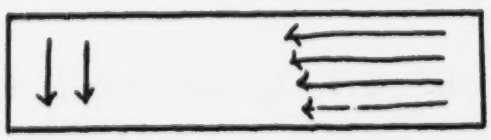


2. Make another magic square by subtracting 3 from each number in the square you made. Prove that the new square is magic.

3. Make another magic square by adding 5 to each number in the square you made. Prove that the new square is magic.

Activity F

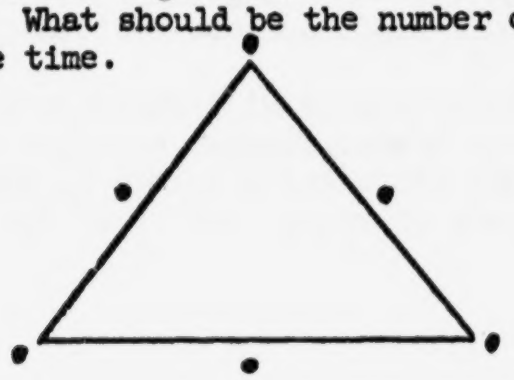
Put on your Indian feather thinking cap and THINK! An Indian chief has this way of showing that he had 24 warriors in his army. Can you tell how he counted?



Make up some Indian picture problems of your own.

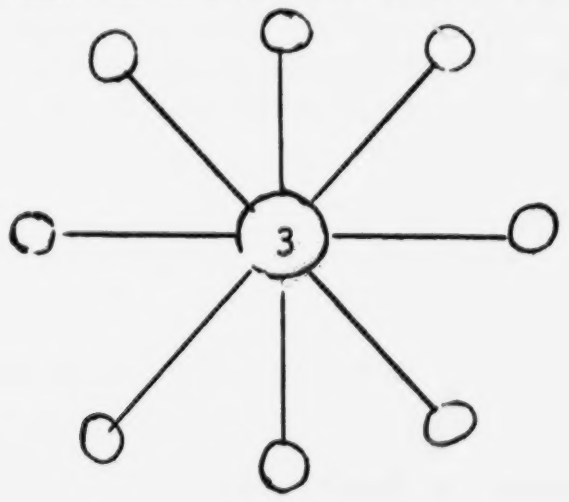
Activity G

Draw the triangle and the dots as shown. The dots on the triangle are to be numbered with one-digit numbers. The sum of the three numbers on each side is to be 17. What should be the number of each dot? No number is to be used more than one time.



Activity H

Draw the diagram as shown with the numeral 3 in the center. Put the numerals from 1 to 8 only once in the other circles to make each line of numbers total 12.



Activity I

Draw pictures of things you have at home that have numerals on them. Write the numerals on your drawings.

Activity J

Draw pictures of different shapes of wholes and show 1/2, 1/4, and 1/3 of a whole. Color in parts to show 1/2, 1/4, and 1/3.

Find 1/2 of a set by drawing pictures and putting them into two groups. See how many are in each group. In like manner find 1/4 and 1/3 of a set.

Games

Buzz (Grade 3)

No. of Players: 3-15

Materials: None

Procedure: The players select a "Buzz Number," for example, "3." They begin to count by 1's and substitute the word "Buzz" for multiples of the selected number and for numbers in which the selected number appears. For example: 1, 2, Buzz, 4, 5, Buzz, 7, 8, Buzz, 10, 11, Buzz, Buzz, 14, Buzz, etc.

Partridge Hunt (Grade 3)

No. of Players: 2-6 playing individually or on two teams

Materials: Flash cards with one-digit numbers written on them

Procedure: A number by which the pupils will multiply is decided first, for example, 6. Then the teacher or leader flashes a number card and two individuals call out the answer to the combination formed by the card and the selected number. The first to answer correctly gets the "Partridge"--the card.

Store (Grade 3)

No. of Players: Unlimited

Materials: Newspaper or magazine pictures of articles marked with prices

Procedure: Each child starts to "shop" with an amount of money written at the top of his paper. He "buys" an item and "pays" for it by subtracting the price from the amount of money with which he started. He makes other purchases and pays for them until the entire amount is spent. He may also draw pictures of the articles purchased.

Going to the Store (Grade 1)

No. of Players: 6-8

Materials: A tray of toy trinkets or a box of small cardboard toy silhouettes

Procedure: The teacher or leader asks a child to "go to the store" and gives him a slip of paper which has a numeral on it. The child selects the correct number of objects from the tray or box.

Addition-Multiplication Board Game (Grade 3)

No. of Players: 2

Materials: A chalkboard, wooden, or cardboard chart marked off in squares with the numerals 1-9 written horizontally across the top and vertically down the left side

Procedure: One child points to a position. The other child gives the sum or product of the horizontal and vertical numbers. (See next page for chart.)

	1	2	3	4	5	6	7	8	9
1									
2									
3									
4									
5									
6									
7									
8									
9									

One child may use this table to practice addition or multiplication facts. The child chooses any block and records the sum or product. When he has filled in all the blocks, he can check his work with a key chart or other records.

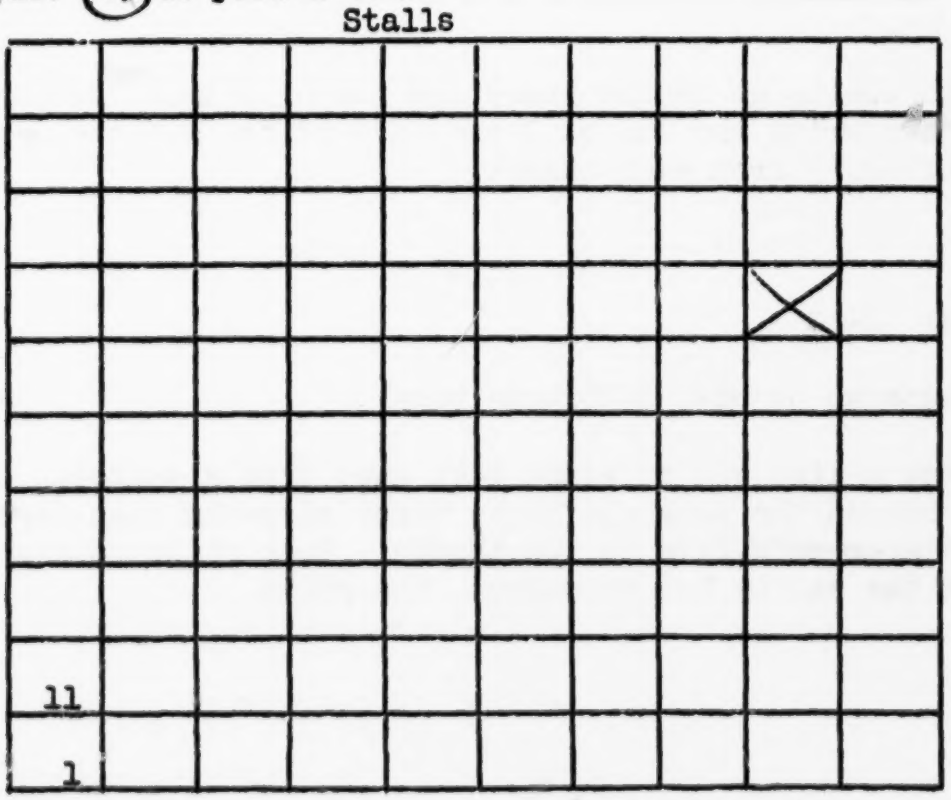
Pigeon Hole Parking

No. of Players: 1

Materials: A simulated parking garage; a large sheet of paper ruled into 100 squares; a box of crayons

Procedure: The object of the game is to park cars correctly. The purpose of the game is to give practice in using the tens system. The player uses a crayon to circle a car's number and to make an X where it should be parked. Then he chooses another color crayon and parks another car.

Example: (69) is parked at X.



Park cars 78, 99, 45, 54, 87, 63, 48, 78, 12, 33.

Time Match

No. of Players: 4-12

Material: 1 large clock face; a small clock face for each player

Procedure: Divide the group into two teams. The teacher or leader calls out a certain time and sets the large clock (so only he can see it). Then he asks the players to set their small clocks for the same time. The leader shows the large clock and the players match theirs with it. A point is scored for each correct setting. The team with the most points wins. For variation, the leader may write the selected time on the board, for example 10:30, 2:00, 5:15, etc.

Measuring Game

No. of Players: 2-12

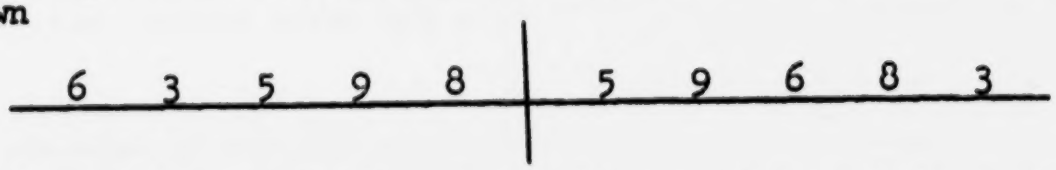
Material: Pencil and paper for each player

Procedure: The players draw three columns on their paper with the headings "Gallon," "Pound," and "Yard." The leader then lists on the chalkboard at least 20 items that can be measured by the gallon, pound, or yard. The players list each item in the proper column.

Chalkboard Twins

No. of Players: 2

Materials: 2 groups of identical numerals written in random order with lines drawn as shown



Procedure: Two pupils go to the board and stand in front of the numerals. At a given signal they write the sum of 7 and each of the numbers. As a variation, they can subtract 3 from each number.

Basketball

No. of Players: 2-10

Materials: Wastecan or box; 5-10 bean bags

Procedure: Draw a line six to eight feet away from a wastecan or box. Each player stands behind the line and takes turns throwing bean bags into the can or box. Each player gets five to ten throws. Each child counts the number of bean bags in the can or box to compute his score.

Tens and Ones

No. of Players: 2-12

Materials: Chalkboard and chalk

Procedure: Someone is chosen to stand before the group. He may say, "I am thinking of a number that is one ten and three ones." He calls on another child to write the number on the board. If the child writes it correctly, he becomes the new leader. For variation, the leader may say, "I am thinking of some money that is 1 dime and 3 pennies. How much money am I thinking of?"

Telling Time

No. of Players: 2-12

Materials: Large clock face with movable hands

Procedure: The leader begins the game by setting the clock hands. He asks the players to raise their hands if they know the time shown by the clock. The child who gives the correct answer becomes the new leader and sets the clock.

I Have Two Numbers (Grade 3)

No. of Players: 4-8

Materials: Cards with the numerals 1-19 written on them; a box

Procedure: The leader thinks of a subtraction combination whose difference is less than 10, for example, 15 - 8. He places the two cards numbered 15 and 8 under the box and then calls on one of the players. Leader: "I have two numbers. The difference between them is 7." James: "Do you have 12 - 5?" Leader: "No, I do not have 12 - 5." Bill: "Do you have 15 - 8?" Leader: "Yes, I have 15 - 8." The leader lifts the box to let the players see the numbers. The player who guessed correctly takes the leader's place and the game proceeds as before.

Exchange Places

No. of Players: 10 or more

Materials: None

Procedure: One child or the teacher is IT. He asks children to exchange places by calling to them using ordinal numbers. For example, he may say, "The second person in the third row change places with the fourth person in the first row."

Bounce the Ball

No. of Players: 2-10

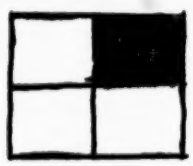
Materials: Ball

Procedure: One child stands in front of the group and bounces the ball any number of times. The child asks another player to tell how many times the ball was bounced. The child who gives the correct number is permitted to bounce the ball next.

Post Office (Grades 2-3)

No. of Players: 4-12

Materials: Flash cards showing fractional parts of various kinds; fractional names should be written on the back of each card



Procedure: The flash cards are at the "General Delivery Window" at the "Post Office." Each child asks, "Do I have any mail today?" If the child can tell the name of the fraction pictured, he is given the card. The child who gets the most letters may be the "postal clerk" the next time the game is played.

Fractional Bingo

No. of Players: 6-12

Materials: A fractional bingo game made by writing fractions on players' cards and drawing fractional parts on flash cards for the leader

Procedure: The game is played like regular bingo except that the leader shows, rather than calls, each flash card.

Example:

1/2	1-1/2	1-1/4
3/4	Free	1/3
1	2/3	1/4

Player's Card

Leader's Card

Baseball (Grades 2-3)

No. of Players: 2 teams with 5 to 9 players each

Materials: A baseball diamond drawn on the chalkboard; two or more numerals from one through 5 are written at each base and a numeral between six and ten in the pitcher's box

Procedure: The teacher points to the number in the pitcher's box and to one of the numbers at first base. The "player-at-bat" gives the difference between the two numbers. The same procedure is followed for each of the other three bases. If a player misses any of the answers, he is out. If he does not miss, he makes a score. After 3 outs, the sides change.